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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,277	08/30/2001	Ahmad Jalali	PA000054	8791

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QUALCOMM, INC
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EXAMINER

TSEGAYE, SABA

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/943,277	Applicant(s) JALALI, AHMAD	
	Examiner Saba Tsegaye	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14-18, 21-29 and 31-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14-18, 21-29 and 31-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed on 11/10/05. Claims 1-11, 14-18, 21-29 and 31-39 are pending. Currently no claims are in condition for allowance.

Claim Rejections - 35 USC § 102

2. Claims 16, 21-25, 29, 31, 32 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanterakis et al. (US 6,606,341).

Regarding claim 16, Kanterakis discloses an apparatus for pre-coding in a communication system comprising:

a pre-coder (422) configured to pre-code first reference data in accordance with pre-coder parameters (see fig. 4; column);

a first transmitter (430) communicatively coupled to said pre-coder configured to (see figs 4; column 5, lines 1-12):

transmit the pre-coded data (430); and

transmit a non pre-coded second reference data on a common pilot signal (453), wherein the common pilot signal is sent on a separate channel from the pre-coded data (column 5, lines 45-51).

Regarding claims 21 and 24, Kanterakis discloses the method wherein the reference data are continuous reference data (column 12, lines 53-55).

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Regarding claims 22 and 25, Kanterakis discloses the apparatus wherein the first transmitter is further configured to transmit the non pre-coded first reference data discontinuously (column 12, lines 53-55).

Regarding claim 23, Kanterakis discloses the apparatus wherein the non pre-coded second reference data comprise a pilot data (see fig. 4, 453).

Regarding claim 29, Kanterakis discloses an apparatus for demodulating pre-coded data, comprising:

- a first receiver configured to (see fig. 4):

- receive a pre-coded reference data and a pre-coded payload data (422);

- receive non pre-coded reference data on a common pilot signal (453), wherein the common pilot signal is received on a separate channel from the pre-coded data ; and

- determine demodulator parameters in accordance with the received pre-coded reference data and the non pre-coded reference data (417, 421); and

- a demodulator communicatively coupled to the receiver configured to demodulate the pre-coded payload data in accordance with the determined demodulator parameters (418, 421).

Regarding claim 31, Kanterakis discloses the apparatus wherein the reference data comprise a pre-coded pilot signal (see fig. 4, 453).

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Regarding claim 32 and 33, Kanterakis discloses the apparatus wherein the reference data are continuous reference data (column 12, lines 53-55).

Regarding claim 37, Kanterakis discloses an apparatus for demodulating pre-coded data, comprising:

means for receiving a pre-coded reference data and a pre-coded payload data (417;

means for receiving non pre-coded reference data on a common pilot signal wherein the common pilot signal is received on a separate channel from the pre-coded data (417);

means for determining demodulator parameters in accordance with the received pre-coded reference data and the non pre-coded reference data (417, 418); and

means for demodulating the pre-coded payload data in accordance with the determined demodulator parameters (418, 421).

Claim Rejections - 35 USC § 103

3. Claims 1-8, 11, 14, 15, 26, 36, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. in view of Saints (US 5,903,554).

Regarding claims 1-5, 8, 11, 26 and 36, Kanterakis discloses all the claim limitations as stated above, except for the first data comprises pre-coding dedicated pilot data.

Saints teaches a pre-coded pilot signal (column 4, lines 45-64; column 5, lines 14-41).

It would have been obvious to one ordinary skill in the art at the time of the invention was made to use the teachings of Saints of pre-coding a pilot signal in the system of Kanterakis in order to control the transmission power of the transmitter (see Saints, column 5, lines 15-22; summary of the invention).

Regarding claims 6, 7, 14 and 15, Kanterakis discloses the method wherein the transmitting a non pre-coded reference data comprises: transmitting a continuous/discontinuous non pre-coded reference data (column 12, lines 53-55).

Regarding claim 38, Kanterakis discloses, in Fig. 4, a method for pre-coding in a communication system, the method comprising:

pre-coding predetermined data (422) in accordance with a set of pre-coder parameters to obtain burst of pr-coded predetermined data;

transmitting over the communication link a second pilot burst (453) to the destination station, wherein the second pilot burst comprises non-pre-coded predetermined data (column 5, lines 45-51).

However, Kanterakis does not disclose the pre-coded reference data is a first pilot signal.

Saints teaches a pre-coded pilot signal (57, 55).

It would have been obvious to one ordinary skill in the art at the time of the invention was made to use the teachings of Saints of pre-coding a pilot signal in the system of Kanterakis in order to provide a high quality of pilot signal.

Regarding claim 39, Kanterakis discloses the method further comprising:

receiving, from the destination station, an estimate of characteristics of the communication link (417, 418); and adjusting the set of pre-coder parameters in accordance with the estimate (421).

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4. Claims 9, 10, 18, 19, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. in view of Chung (US 4,995,057).

Kanterakis discloses all the claim limitations as stated above. Further, Kanterakis discloses that a packet is translated to a carrier frequency, filtered and amplified by transmitter RF section 430 and pas through circulator 410. However, Kanterakis does not expressly disclose a processor communicability coupled to the at least two equalizers.

Chung discloses, in Fig. 3, equalizer 380, 381 and sampler 384 (column 3, lines 13-21; column 6, lines 35-67; column 8, line 64-column 9, line 11).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use more than one equalizer, such as that suggested by Chung, in the apparatus of Kanterakis in order to optimize the quality of data and to assure the noise at the input to the receiver decoder is both Gaussian and white.

5. Claims 17, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis in view of Abeta et al. (US 6,647,003).

Kanterakis discloses all the claim limitations as stated above, except for a digital signal processor communicatively coupled to the memory storage unit and capable of executing instruction.

Abeta teaches that a transmitting processor 610 comprises a transmitting section 710, a channel encoder 722 and inserting section 724 which are implemented in the form of software using DSP and a memory that stores programs.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kanterakis's apparatus to utilize a system where a digital signal processor

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communicatively coupled to the memory storage unit and capable of executing instruction, as taught by Abeta in order to provide much higher performance and much more efficient system.

Response to Arguments

6. Applicant's arguments filed 11/10/05 have been fully considered but they are not persuasive. Applicant argues (Remarks, pages 10-11) that Kanterakis does not anticipate claims 16, 21-25, 29, 31, 32 and 37 because *reference numeral 422 refers to FEC encoder* “adds extra bits to the information bits so that errors may be found and corrected at the receiver.” On the other hand, “pre-coding is used to *eliminate multi-path interference...*” Examiner respectfully disagrees with Applicant contention. Kanterakis clearly discloses that FEC encoder 422 **encodes** data before the data is transmitted. Furthermore, it is noted that the features upon which applicant relies (i.e., multi-path interference...) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. Still on page 11, Applicant argues, “Examiner has failed to point out where Saints teaches the use of a pre-coder for *pre-coding dedicated pilot data*”. Examiner respectfully disagrees with applicant assertion. Saints clearly shows that **encoder 55** converts pilot data into encoded symbols (pre-coding pilot data) and provides to modulator 53, which modulates the coded data for transmission.

8. Applicant argues (Remarks, page 12) that the sampler 384 disclosed in Chung is not a processor which determines “said pre-coder parameters by adjusting characteristics of the at least equalizers in accordance with the received non pre-coded second reference data and the pre-

coded first reference data". It is respectfully submitted that the rejection is based on the combined teaching of the Kanterakis patent and the Chung patent. Chung teaches that equalizers 380 and 381 respectively reduce the **noise and distortion** in the in-phase and quadrature component signals within the **received signal** (the received non pre-code second reference data and the pre-coded reference data which is disclosed by Kanterakis).

9. Still on page 12, Applicant argues that Kanterakis does not disclose a pre-coder. Examiner respectfully disagrees with Applicant contention. Kanterakis clearly discloses that FEC encoder 422 **encodes** data before the data is transmitted.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

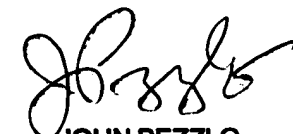
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST

January 10, 2006



JOHN PEZZLO
PRIMARY EXAMINER